

# Chapter 1

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## Roadway Treatment Goals Treatment Goal Chart Treatment level Maps



## **Roadway Treatment Goals**

Due to the dynamic and diverse nature of winter weather and resultant road conditions, WSDOT maintenance personnel use a variety of methods and materials to help prevent snow and ice formation on state highways. Outcomes of snow and ice control treatments will vary, dependent upon severity of winter weather events, topography, traffic levels and speeds, and proximity to support facilities (i.e. liquid chemical storage tanks and salt stockpiles). While outcomes can be measured in a variety of ways, the motoring public most often measures maintenance efforts in terms of road conditions during and immediately after winter weather events. Maintenance personnel also rate roadway conditions during the winter season (see performance measure chapter). This information is used to project expected road conditions associated with snow and ice treatment levels for different events. The unique nature of individual winter weather events limits the relevance of projected expectations on a given storm, but when ratings from an entire winter season are averaged, they become a good indicator of the Level of Service (LOS) provided by maintenance personnel over the entire season.

Winter climates differ greatly between Eastern and Western Washington, so road treatment levels may vary on either side of the Cascades to match the ability to respond to those conditions. Limited funding also requires prioritization of roads for snow and ice control, so that different levels of service will be employed for individual roads and sections of roads.

### **Eastern Washington Treatment Goals:**

In Eastern Washington periodic snowfall events are typical and freezing temperatures and relatively drier conditions may persist for the duration of the winter season. The winter maintenance program (labor, equipment, and materials) is sized and developed to facilitate the movement and safety of traffic under normal expected winter conditions. The exceptional winter weather event in Eastern Washington is typically a wide spread ice storm or a snowstorm of severe intensity and duration.

The Snow and Ice program is funded and equipped based primarily on historical records and the average winter conditions collected and compared over time. When occasional extreme winter weather occurs, the program cannot provide the accustomed level of service because existing resources are insufficient for this type of event. Since these types of events happen infrequently, it would be inefficient management of resources to size and base a winter maintenance program for the exceptional winter weather event.

### **Western Washington Treatment Goals:**

In Western Washington the winter season typically lasts from late November thru early March. The weather is generally cool and wet with occasional ice or snow events. The winter maintenance program (labor, equipment, and materials) is sized and based to facilitate the movement and safety of traffic under normal expected winter conditions. This will typically be when temperatures drop and create black ice or frost conditions. A light to moderate snowfall event may also occasionally take place. These are typically characterized by localized events. The exceptional winter weather event in Western Washington is going to be a heavy snowstorm, short in duration over a wide geographic area.

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program cannot provide the accustomed level of service because existing resources are insufficient for this type of event. Since these types of events happen infrequently, it would be inefficient management of resources to size and base a winter maintenance program for the exceptional winter weather event.

### **Other Facilities:**

The primary function and mission of the Snow and Ice program is response to roadway conditions in order to keep traffic moving and to provide for the accustomed level of service. WSDOT recognizes that there are other facilities besides state highways that may rely upon state forces for winter response in order to keep those facilities functional. These can include WSDOT Ferries parking lots, Park & Ride lots, WSDOT regional and area facility lots and some sidewalks that were constructed using Federal Funds.

In all cases, response to roadway conditions will take precedence over any such activities, and these facilities will be handled on a “as conditions allow” basis. This may mean that such facilities will remain unmaintained until such time that all roadways in any given region are clear, level of service goals are met, and normal movement of goods and services is restored.

Treatment Level Goals	Washington State Department of Transportation Description of Roadway Treatment Actions
Level 1	<ol style="list-style-type: none"> <li>1. Pre-event: Pre-treat roadway with anti-icing chemicals if conditions are appropriate for such treatment. Monitor the treatment for effectiveness and for the need to reapply.</li> <li>2. During event: Apply deicing chemicals to roadway during a snow event to keep snow and ice from accumulating and bonding to the pavement and to expedite the process of mechanical removal. If compact snow or black ice forms on the roadway, apply pre-wet solid chemicals to break the snow/ice bond and to assist the process of mechanical removal.</li> <li>3. Post-event: Continue snow and ice removal operations including chemical and mechanical methods until bare pavement is achieved.</li> </ol>
Level 2	<ol style="list-style-type: none"> <li>1. Pre-event: Maintain the same as higher priority roadways after those roadways have been treated and as resources allow.</li> <li>2. During event: Apply deicing chemicals to roadway during a snow event to keep snow and ice from accumulating and bonding to the pavement and to expedite the process of mechanical removal. If compact snow or black ice forms on the roadway, apply pre-wet solid chemicals to break the snow/ice bond and to assist the process of mechanical removal.</li> <li>3. Post Event: Return pavement to bare and wet condition as soon as practical using plowing as the primary operation with moderate use of pre-wet materials to assist snow and ice removal.</li> </ol>
Level 3	<ol style="list-style-type: none"> <li>1. Pre-event: Maintain the same as higher priority roadways after those roadways have been treated and as resources allow.</li> <li>2. During event: Apply deicers on first passes when and where necessary to keep snow and ice from accumulating. Subsequent passes should rely primarily on plowing with the moderate use of pre-wet materials to assist mechanical snow and ice removal.</li> <li>3. Post event: Return pavement to bare and wet condition as soon as practical using plowing as the primary operation with moderate use of pre-wet materials to assist snow and ice removal.</li> </ol>
Level 4	<ol style="list-style-type: none"> <li>1. Pre-event: Maintain the same as higher priority roadways after those roadways have been treated and as resources allow.</li> <li>2. During event: Apply deicers on first passes when and where necessary to keep snow and ice from accumulating. Subsequent passes should rely primarily on plowing with the moderate use of pre-wet materials to assist mechanical snow and ice removal.</li> <li>3. Post event: Return pavement to bare and wet condition as soon as practical using plowing as the primary operation with moderate use of pre-wet materials to assist snow and ice removal.</li> </ol>

**Level 5**

(Until closed  
for the season.)

1. **Pre-event:** Maintain the same as higher priority roadways after those roadways have been treated and as resources allow.
2. **During event:** Apply deicers on first passes when and where necessary to keep snow and ice from accumulating. Subsequent passes should rely primarily on plowing with the moderate use of pre-wet materials to assist mechanical snow and ice removal.
3. **Post event:** Return to bare and wet as resources allow.

**Note:** The use of abrasives, either alone or in combination with salt is allowable at all levels when conditions are appropriate for such use. This would include, but not be limited to conditions too cold for the effective use of salt, heavy snow or black ice where maintaining traction is a concern and on subsequent passes.